

**COMMONWEALTH OF VIRGINIA**  
**Department of Environmental Quality**  
**Valley Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

Team/IBS, Inc.  
Winchester, Frederick County, Virginia  
Permit No. VRO81111

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Team/IBS, Inc. has applied for renewal of the Title V Operating Permit for its expandable polystyrene manufacturing facility in Winchester. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: \_\_\_\_\_

Date: 1/6/04

Air Permit Manager: \_\_\_\_\_

Date: 1/6/04

Deputy Regional Director: \_\_\_\_\_

Date: 1/7/04

## **FACILITY INFORMATION**

### Permittee

Team/IBS, Inc.  
326 McGhee Road  
Winchester, VA 22603

### Facility

Team/IBS, Inc.  
326 McGhee Road  
Winchester, VA 22603

AFS ID No. 51-069-0101

## **SOURCE DESCRIPTION**

SIC Code: 3086 – Manufacture of foamed plastic insulation board

Team/IBS, Inc. (IBS) manufactures molded foam boards for insulation. The boards are made out of expandable polystyrene beads. Polystyrene beads are placed in a pre-expander where the beads are steam heated and expand due to the pentane blowing agent in the beads. After expansion the beads are transferred to a fluidized bed dryer where excess steam is removed with hot air. Beads are placed in storage silos, and from storage are molded into blocks. The blocks are then cut into different board shapes. Some of the cut material is laminated to other materials. Pollution sources at the facility include the pentane blowing agent which is lost throughout the process, and organic solvent evaporation from molding binders and adhesives used in the lamination process.

The facility is a Title V major source of volatile organic compounds with the potential to emit 240 tons per year. This source is located in an attainment area for all pollutants, and is a PSD minor source (potential to emit of each criteria pollutant is less than 250 tons per year). The facility was previously permitted under a Minor New Source Review Permit issued on June 21, 1989 and amended on August 5, 1991 and December 30, 1998. The facility currently operates under a Title V Operating Permit issued January 19, 1999 and amended June 17, 2003 with an expiration date of January 19, 2004.

## **CHANGES TO EXISTING TITLE V PERMIT**

The Title V Operating Permit was amended on June 17, 2003 to reflect a name change from Insulated Building Systems, Inc. to the current name of Team/IBS, Inc. This amendment also updated the registration number of the facility from 21111 to 81111 to reflect registration number changes to the first digit of all Valley Regional Office sources. This change was effective June 15, 1999. As a result, the Title V Permit Number was changed from VRO21111 to VRO81111.

On July 17, 2003 the Virginia DEQ, Valley Regional Office received a Form 805 application dated July 16, 2003 from Team/IBS, Inc. for the renewal of their Title V Operating Permit. Amended information dated August 19, 2003 was received on August 20, 2003. As indicated in the application, the current operations at Team/IBS, Inc. are identical to those governed by the current Title V Operating Permit issued January 19, 1999 and amended June 17, 2003. The following changes are proposed in the renewed Title V Operating Permit:

Removal of the VOC retention testing requirement unless process or operational changes are made which affect VOC retention factors for the products. This testing has been completed for the current operations.

Updating of the rated capacity of insignificant emission unit B-1 from 8.346 MMBtu/hr to 8.369 MMBtu/hr. This value was incorrectly stated in the current Title V Operating Permit. This change does not affect any determination previously made for this unit.

Updating of all general conditions to reflect changes to boilerplate language.

## COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit on August 25, 2003, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

## EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The significant emission unit at this facility consists of the following:

EU1: This emission unit covers activities which release blowing agent at the facility and includes the pre-expander/dryer (PE-1), expanded bead storage (EBS-1), molding (M-1), and product storage (HB-1). Emissions include volatile organic compounds (VOC). There is no pollution control equipment.

## EMISSIONS INVENTORY

A copy of the 2002 annual emission update is attached as Attachment A. Criteria pollutant emissions are summarized in the following table for emission unit EU1. There are no hazardous air pollutant emissions associated with emission unit EU1. No criteria pollutant or hazardous air pollutant emissions are shown for insignificant emission units.

2002 Actual Emissions

	2002 Criteria Pollutant Emissions in Tons/Year				
Emission Unit	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
EU1	124.0	-	-	-	-
Total	124.0	-	-	-	-

## **EMISSIONS UNIT APPLICABLE REQUIREMENTS - EU1**

### **Limitations:**

The following applicable VOC limitations are State BACT requirements as well as requirements limiting the facility potential to emit from Part I, Conditions 4, 5, and 6 of the Minor NSR Permit issued on June 21, 1989 and amended on August 5, 1991 and December 30, 1998. A copy of the permit is attached as Attachment B with the permit amendments attached as Attachments C and D:

Condition 4, limiting the yearly production of expanded polystyrene to 4800 tons per year, calculated monthly as the sum of each consecutive 12 month period.

Condition 5, limiting the pre-expander/dryer operation to 4800 hours per year, calculated monthly as the sum of each consecutive 12 month period.

Condition 6, limiting VOC emissions to 240 tons per year, calculated monthly as the sum of each consecutive 12 month period.

### **Monitoring and Recordkeeping:**

The monitoring and recordkeeping requirements in Part II, Condition 2 of the NSR permit have been modified to meet Part 70 requirements.

The permittee will monitor and record monthly and rolling 12 month records of bead usage for each lot used, VOC content for each lot used, and pre-expander/dryer hours of operation. The permittee will keep records of all bead supplier MSDS sheets or VOC data sheets showing bead VOC content for each bead lot used and records of DEQ-approved VOC retention factors and VOC retention factor test results. The permittee will calculate and record monthly and rolling 12 month VOC emissions using the formula shown below to determine compliance with the VOC emission limit.

$$E = \sum_{i=1}^n (W_i \times C_i) / 2000 \times (1 - R)$$

where

$E$  = VOC emissions in tons per month;

$W_i$  = The pounds of an individual lot of beads processed in the month;

$C_i$  = The weight fraction VOC content of the beads for an individual lot;

$R$  = The weight fraction of VOC retained in the product as approved by the DEQ or determined by retention testing required in Condition III.C of the permit.

### **Compliance Assurance Monitoring:**

Compliance Assurance Monitoring (CAM) does not apply to emission unit EU-1 since there are no control devices used to achieve compliance with emission limitations.

**Testing:**

The Title V Operating Permit issued 1/19/99 required testing to determine the weight fraction of VOC retained in the product. This value is used to calculate VOC emissions to demonstrate compliance with the VOC limit of 240 tons per year. Initial retention testing was completed 3/18/99 and 3/30/99. The resulting VOC retention factors of 19% for hot box products and 40% for products which are not processed in the hot boxes were approved by the DEQ on 6/24/99. Additional retention testing is only required if process or operational changes are made which may affect VOC retention factors for the products. Additional testing shall be performed using South Coast Air Quality Management District (SCAQMD) Test Method 306-91, Analysis of Pentanes in Expandable Styrene Polymers, or other method approved in writing by the Department.

Except for the testing described above, the permit does not require other source emission tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require emission testing not included in this permit if necessary to determine compliance with an emission limit or standard.

**Reporting:**

NSR Permit Part II, Condition 3 required the submittal of semi-annual VOC reduction progress reports and reporting of VOC emissions. These requirements have been included in the Title V permit.

**Streamlined Requirements:**

NSR permit Part I, Condition 7 which required an initial visible emission reading has not been included. The visible emission reading was performed on June 19, 1991 and found no visible emissions.

New source start-up notification requirements in Part II, Condition 1 of the NSR permit have not been included since the source is in operation.

Remaining general conditions in Part II of the NSR permit have been modified to meet the general condition requirements of 40 CFR Part 70 and 9 VAC 5-80-110.

**GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

**STATE ONLY APPLICABLE REQUIREMENTS**

There are no state only applicable requirements.

## **FUTURE APPLICABLE REQUIREMENTS**

There are currently no known future applicable requirements.

## **INAPPLICABLE REQUIREMENTS**

The applicant has identified the Standards of Performance for Volatile Organic Compound Emissions from Polymer Manufacturing Facilities in 40 CFR Part 60 Subpart DDD and 9 VAC 5-50-410 as inapplicable. The facility does not manufacture polystyrene beads.

The applicant has identified the National Emission Standard for Hazardous Air Pollutants Group IV Polymers and Resins in 40 CFR Part 63 Subpart JJJ and 9 VAC 5-60-100 as inapplicable. The facility does not manufacture polystyrene resin and is not a major source of hazardous air pollutants.

## **INSIGNIFICANT EMISSION UNITS**

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

GT1: This emission unit covers the application of Geotech binder used to waterproof insulation board. Emissions include VOC from evaporation of organic solvents in the binder. Emissions are insignificant based on emission level. There is no pollution control equipment.

RP1: This emission unit covers the roll laminator which roll adhesives onto the polystyrene block. Emissions include VOC from evaporation of organic solvents in the adhesives. The emissions are insignificant based on emission level. There is no pollution control equipment.

B1: This emission unit is a Cleaver-Brooks natural gas fired boiler rated at 8.369 million BTU per hour heat input. The emissions are insignificant based on boiler size. There is no pollution control equipment.

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup> (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
GT-1	Geotech Binder	5-80-720 B.2.	VOC	3000 lbs of bead/hr
RP-1	Roll Laminator	5-80-720 B.2.	VOC, Methylene Diphenyl Diisocyanate MDI, Toluene, Ethylene Oxide	28 parts/hr
B-1	NG Fired Boiler	5-80-720 C.2.a.	PM <sub>10</sub> , VOC, CO, NO <sub>x</sub> , SO <sub>2</sub>	8.369 MMBTU/hr

<sup>1</sup> The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed insignificant activity, not Included in permit application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## **CONFIDENTIAL INFORMATION**

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## **PUBLIC PARTICIPATION**

A public notice regarding the draft permit was placed in *The Winchester Star* newspaper, Winchester, Virginia, on November 18, 2003. Public comments were accepted from November 18, 2003, to December 18, 2003. No comments were received from the public or the affected states (West Virginia, Pennsylvania, and Maryland) regarding the draft permit and a public hearing was not required.

The draft permit was sent to EPA on November 17, 2003. The 45-day EPA review period expired on 1/2/04. No comments were received from EPA.

## **ATTACHMENTS**

The following information is attached:

- A. 2002 Annual Emission Update for Emission Unit EU1.
- B. Minor New Source Review Permit issued June 21, 1989.
- C. Minor New Source Review Permit Amendment dated August 5, 1991.
- D. Minor New Source Review Permit Amendment dated December 30, 1998.

# **ATTACHMENT A**



# **ATTACHMENT B**

# **ATTACHMENT C**

# **ATTACHMENT D**